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(54) **METHODS AND APPARATUSES FOR DIGITAL PRE-DISTORTION**

(57) A system, comprising pre-distortion circuitry which comprises an output; wherein the pre-distortion circuitry is configured to pre-distort at least two signals in different transmit bands. The system further comprising a digital to analog converter comprising an input coupled to the output of the pre-distortion circuitry, and an output; wherein the pre-distortion circuitry is further configured to skew a center frequency of a bandwidth in which pre-distortion is performed and which includes one transmit band so that a pre-distortion bandwidth covers corresponding uplink and downlink bands; wherein the pre-distortion of each of the at least two signals is based upon a portion of a corresponding power amplified, pre-distorted signal, and wherein the pre-distortion diminishes intermodulation distortion (IMD) products in the pre-distortion bandwidth. The system further comprising at least two power amplifier circuits, wherein each power amplifier circuit comprises an input and an output, and is configured to operate in a unique transmit band; wherein each input of each power amplifier circuit is coupled to the output of the digital to analog converter; wherein each output of each power amplifier circuit is coupled to one another; and wherein the at least two power amplifier circuits are configured to power amplify at least two pre-distorted signals each corresponding to the unique transmit band.

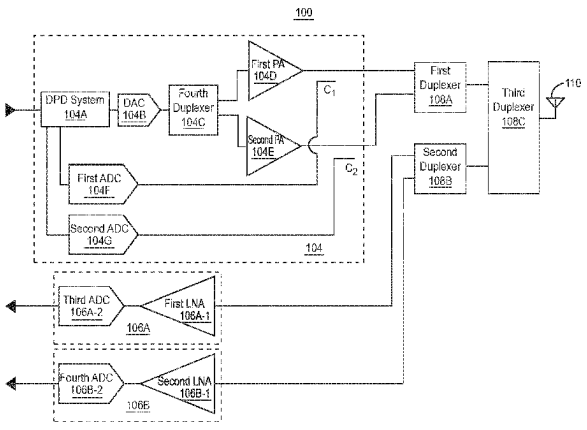

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 24 20 8123

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	JP H10 290125 A (HITACHI ELECTRONICS) 27 October 1998 (1998-10-27) * abstract * * figures 1-3 * * paragraphs [0001], [0008] - [0018] *	1-14	

TECHNICAL FIELDS SEARCHED (IPC)
H03F
H04B
H04L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	10 January 2025	Mouanda, Thierry

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10-01-2025

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